

DYNAMIC DATA ITEM PROCESSING

ABSTRACT OF THE INVENTION

A method and apparatus for packet processing is disclosed. In one embodiment of the invention the method and apparatus is implemented in plurality of pipeline stages, each stage or group of stages being configured to a particular processing operation. Each stage may operate simultaneously, if data is available, and independently. Common data or control words are shared between the various stages of the pipeline to provide control and supplemental data to each processing stage in the pipeline. In one embodiment the processing pipeline includes one or more dynamic stages and one or more static stages. The dynamic stages are configured to modify, remove, or supplement portions of the packet as the packet or portion thereof passes through the pipeline with the aid of a more flexible control structure. The static stages are configured to modify, remove, or supplement portions of the packet as the packet or portion thereof passes through the pipeline with the aid of a hardwired system. A control system is associated with the packet processing system. The control system includes a central portion and a distributed portion that is associated with each pipeline stage. High speed operation is achieved through the use of hardware based operation while processing flexibility is provided by control word association at each processing stage.